

Serial No. 10/521,943
Docket No. PTGF-04078US

7

REMARKS

Claims 1-29 are pending in this application. By this Amendment, claims 1, 2, 14 and 29 are amended.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicants specifically state that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

With respect to the prior art rejections, claims 1-5, 10-17, 19-22, and 24-28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhang (U.S. Patent No. 6,578,998) in view of Newby (U.S. Patent No. 6,999,318). Claims 6-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhang, in view of Newby, Suchiro, et al. (U.S. Patent Application Publication No. US 2002/0024808), Bukosky (U.S. Patent No. 6,076,948) and Chen (U.S. Patent No. 6,733,156). Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhang, in view of Newby and Gorczyca (U.S. Patent No. 6,800,373). Claim 18 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhang, in view of Newby and Lowery (U.S. Patent No. 5,959,316). Claim 23 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhang, in view of Newby and Camras, et al. (U.S. Patent No. 6,733,156). Claim 29 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Newby in view of Zhang.

Claims 1, 2, 14 and 29 are also provisionally rejected under the judicially created doctrine of non-statutory double patenting over co-pending U.S. Patent Application 11/411,144.

The rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

The invention of claim 1, for example, is directed to a light emitting apparatus that includes a light source section having a solid-state light emitting element, a power supply section that supplies power to the light source section, a reflection section that is disposed opposite to a light extraction surface of the light source section to reflect light emitted from the light source section, a heat radiation section that is disposed with a heat radiation width in

Serial No. 10/521,943
Docket No. PTGF-04078US

8

a back direction of the light source section, and an insulating layer disposed between the power supply section and the heat radiation section. The heat radiation section includes a planar member disposed parallel to a light extraction direction of the light emitting apparatus, and the power supply section is formed along a bottom of the planar member (Application at page 11, lines 23-25, page 12, lines 10-11, page 13, lines 16-21 and page 14, lines 8-12).

This structure is important because the planar member alone can prevent the blocking of light that is emitted from the light emitting element. Further, because the power supply section is formed along a bottom of the planar member, the invention has the effect that the heat radiation section can efficiently radiate heat generated from the power supply section (lead) during the operation of the light emitting element. In addition, since the power supply section (i.e., heat source) is insulated from the heat radiation section by the insulation layer disposed therebetween and the heat radiation section (planar member) elongates in the height direction of the apparatus, a steep heat gradient can be formed in the height direction, i.e., between the power supply section and the top of the heat radiation section (planar member), so that the heat generated from the power supply section (lead) can be more quickly transmitted through the heat radiation section (Application at page 2, lines 25-28 and page 14, lines 8-20)

In a conventional light emitting apparatus, as described in the Background of the present application, if the size of a power lead is increased to cope with increased heat generation from the light source, the light emission efficiency is decreased due to blockage of the light by the enlarged power lead (Application at page 2, lines 17-24).

In contrast, an exemplary aspect of this invention may provide for dissipation of heat from the light source without interfering with light emission (Application at page 14, lines 7-21).

II. THE PRIOR ART REJECTIONS

A. The Zhang and Newby reference rejection

In rejecting claims 1-5, 10-17, 19-22, and 24-28 under 35 U.S.C. §103(a), the Examiner alleges that the combination of Zhang and Newby render the rejected claims obvious. However, there are features of the rejected claims that are neither taught nor suggested by the combination of references.

For example, the combination of references fails to disclose or suggest that the heat

Serial No. 10/521,943
Docket No. PTGF-04078US

9

radiation section includes a planar member disposed parallel to a light extraction direction of the light emitting apparatus, and the power supply section is formed along a bottom of the planar member, or an insulation layer disposed between the power supply section and the heat radiation section.

Zhang discloses a cell body 10 that comprises a bowl shaped reflecting member 11 and four supporting walls 12 to form a box shape structure (col. 3, lines 1-4 of Zhang). A light source arrangement has solid-state light source 20 and the light source 20 has terminal electrodes 201, 202 and a luminary element 21 that emits light when the terminal electrodes are electrified (col. 2, lines 51-56). The terminal electrodes are integrally extended from two inner ends of supporting arms 311, 312 of a supporting bridge 31 that acts as a heat sink. The supporting bridge 31 is part of a supporting frame 30 that is electrically connected to a circuit board 15 (col. 2, line 57-col. 3, line 50; Figs. 2 and 3).

The Examiner alleges that the supporting bridge 31 and the circuit board 15 correspond to the power supply section recited in the claims. The Examiner further alleges that the supporting bridge 31 also corresponds to the heat radiation section.

As discussed above, the claimed heat radiation section can efficiently radiate heat generated from the power supply section (i.e., the lead) during the operation of the light emitting element. Because the power supply section (i.e., the heat source) is insulated from the heat radiation section by the insulation layer disposed therebetween and the heat radiation section (i.e., the planar member) elongates in the height direction of the apparatus, a steep heat gradient can be formed in the height direction, i.e., between the power supply section and the top of the heat radiation section (i.e., the planar member), so that the heat generated from the power supply section (i.e., the lead) can be more quickly transmitted through the heat radiation section

However, the supporting bridge 31 of Zhang (i.e., the heat radiation section) conducts power throughout its entirety. Thus, heat generated will be generated from the entire supporting bridge 31. As such, the heat gradient achieved by the claimed structure cannot be achieved.

Accordingly, Zhang fails to disclose or suggest the features as alleged in the Office Action.

Newby also fails to disclose or suggest that the heat radiation section includes a planar member disposed parallel to a light extraction direction of the light emitting apparatus, and

Serial No. 10/521,943
Docket No. PTGF-04078US

10

the power supply section is formed along a bottom of the planar member.

For example, in Newby the power supply section (i.e., the metallic thin film 14,15) is not formed along a bottom of the heat radiation member (i.e., the heatsink 46) (see Fig.4 of Newby). As a result, the steep heat gradient discussed above cannot be obtained by Newby..

Regarding claim 3, the Examiner relies on col. 3, lines 13-21 of Zhang as teaching "the light emitting apparatus wherein the heat radiation section comprises a same material as the case." However, Zhang fails to disclose or suggest that the material comprising the supporting bridge, that the Examiner considers as corresponding to the heat radiation section, is of the same material as the four supporting walls 12 of the box.

Regarding claim 12, the Examiner again relies on col. 3, lines 13-21 of Zhang as teaching "the light emitting apparatus wherein the heat radiation section comprises a heat radiation plate that comprises a high reflectivity surface to reflect the light."

However, as discussed above, the cited section of Zhang merely recites that the cell body 10 (i.e., the reflecting member 11 and the walls 12) are coated with a reflecting material. Thus, there is no teaching or suggestion by Zhang of a heat radiation section comprising a heat radiation plate.

As Zhang fails to anticipate the rejected claims, withdrawal of the rejection is respectfully requested.

B. The Zhang, Newby, Suehiro, Bukosky and Chen reference rejection

In rejecting claims 6-8 under 35 U.S.C. §103(a), the Examiner alleges that the combination of references renders the subject matter recited in claims 6-8 obvious. However, claims 6-8 are allowable for their dependency on independent claim 1 for the reasons discussed above, as well as for the additional features recited therein.

Moreover, there is no motivation or suggestion to make the combination as proposed in the Office Action. For example, the Examiner alleges that Bukosky discloses a light emitting apparatus having a substrate 50 on which a light emitting diode is commonly made out of glass.

However, the substrate 50 to which the Examiner is referring is a rearview mirror for an automobile (see Fig. 8, col. 6, line 44-col. 7, line 35). As the reference fails to disclose the feature as alleged in the Office Action, reliance on the reference for such a teaching is improper. Further, as the feature is not disclosed or suggested, there is no motivation to

Serial No. 10/521,943
Docket No. PTGF-04078US

11

modify Zhang as proposed in the Office Action.

Moreover, as none of Suehiro, Bukosky and Chen disclose or suggest an insulating layer that is disposed between the power supply section and the wall of the case, the references fail to overcome the deficiencies of Zhang and Newby.

To establish a *prima facie* case of obviousness there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Further, the teaching or suggestion to make the claim combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure (MPEP §2143).

One of ordinary skill in the art would not have been motivated to combine the references because there is no suggestion or teaching to make the combination in the references. For example, Bukosky addresses problems with placing automobile turn signals in rearview or sideview mirrors (col.1, lines 5-61). As such there is no teaching or suggestion in the references to make the combination. Moreover, as discussed above, Bukosky fails to disclose the features as alleged in the Office Action.

As the combination of references fails to disclose or suggest each and every feature recited in the rejected claims, withdrawal of the rejection is respectfully requested.

C. The Zhang, Newby and Gorczyca reference rejection

In rejecting claim 9 under 35 U.S.C. §103(a), the Examiner alleges that the combination of references renders the claimed invention obvious. However, claim 9 is allowable for its dependency on independent claim 1 for the reasons discussed above, as well as for the additional features recited therein.

Moreover, as Gorczyca does not disclose or suggest an insulating layer is disposed between the power supply section and the heat radiation section, the reference fails to overcome the deficiencies of Zhang.

As the combination of references fails to disclose or suggest each and every feature recited in the rejected claim, withdrawal of the rejection is respectfully requested.

D. The Zhang, Newby and Lowry reference rejection

In rejecting claim 18 under 35 U.S.C. §103(a), the Examiner alleges that the

Serial No. 10/521,943
Docket No. PTGF-04078US

12

combination of references renders the claimed invention obvious. However, claim 18 is allowable for its dependency on independent claim 1 for the reasons discussed above, as well as for the additional features recited therein.

Moreover, Lowery does not disclose or suggest that the fluorescent material 52 (alleged to correspond to the claimed phosphor) is disposed on the periphery of the solid-state light emitting device, as recited in claim 18.

Instead, Lowry recites that the fluorescent material 52 is of uniform thickness above the LED (see Fig. 3; col., 3, lines 7-16).

As the combination of references fails to disclose or suggest each and every feature recited in the rejected claim, withdrawal of the rejection is respectfully requested.

E. The Zhang, Newby and Camras reference rejection

In rejecting claim 23 under 35 U.S.C. §103(a), the Examiner alleges that the combination of references renders the claimed invention obvious. However, claim 23 is allowable for its dependency on independent claim 1 for the reasons discussed above, as well as for the additional features recited therein.

Moreover, as Camras does not disclose or suggest that an insulating layer is disposed between the power supply section and the heat radiation section, the reference fails to overcome the deficiencies of Zhang.

As the combination of references fails to disclose or suggest each and every feature recited in the rejected claim, withdrawal of the rejection is respectfully requested.

F. The Newby and Zhang reference rejection

In rejecting claim 29 under 35 U.S.C. §103(a), the Examiner alleges that the combination of references renders the claimed invention obvious.

However, as discussed above neither Newby nor Zhang, whether considered alone or in combination, disclose or suggest that the heat radiation section comprises a planar member disposed parallel to a light extraction direction of the light emitting apparatus, and the power supply section is formed along a bottom of the planar member.

Therefore, withdrawal of the rejection is respectfully requested.

Serial No. 10/521,943
Docket No. PTGF-04078US

13

G. Double Patenting

It is alleged in the Office Action that claims 1, 2, 14 and 29 are obvious over the judicially created doctrine of obviousness-type double patenting in view of U.S. Patent Application 11/411,144.

However, when rejecting claims under the judicially created doctrine of obviousness-type double patenting, the Examiner must properly define the subject matter of the claims at issue and the difference between those claims and the claims in the applied reference.

Further, according to MPEP §804, when making an obviousness-type double patenting rejection, the Examiner should make clear (a) the differences between the inventions defined by conflicting claims – a claim in the reference compared to a claim in the application; and (b) the reasons why a person of ordinary skill in the art would conclude that the invention is an obvious variation of the invention defined in a claim of the reference.

As there has been no attempt to properly define the subject matter of the claims at issue and the difference between those claims and the claims in the applied reference, or meet the requirements of MPEP §804, a *prima facie* case of obviousness-type double patenting has not been established. In fact, there is not even a claim of U.S. Patent Application 11/411,144 that is alleged to render claims 1, 2, 14 and 29 obvious. Therefore, the provisional rejection is improper and should be withdrawn.

Moreover, there are elements of claims 1, 2, 14 and 29 that are not disclosed or suggested by any of claims 1-9 of U.S. Patent Application 11/411,144.

III. Formal Matters and Conclusion

A. Information Disclosure Statement

Applicants respectfully request acknowledgement of receipt and consideration of the references submitted with the Information Disclosure Statement on May 7, 2007.

B. Conclusion

In view of the foregoing, Applicants submit that claims 1-29, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed

Serial No. 10/521,943
Docket No. PTGF-04078US

14

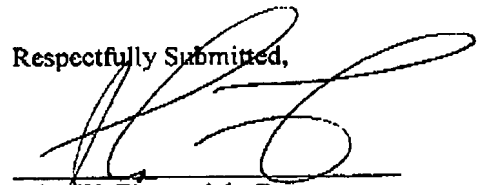
below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Date:

5/21/07

Respectfully Submitted,



John W. Fitzpatrick, Esq.
Registration No. 41,018

Sean M. McGinn, Esq.
Registration No. 34,386

**MCGINN INTELLECTUAL PROPERTY
LAW GROUP, PLLC**
8321 Old Courthouse Road, Suite 200
Vienna, Virginia 22182-3817
(703) 761-4100

Customer No. 21254